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## FOREWORD

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## SOVIET SCIENTIFIC AND ENGINEERING PERSONNEL

### FOREWORD

This report consists of complete translations of selected biographic-type articles on Soviet scientific and engineering personnel. This series is published as an aid to U. S. Government research.

### TABLE OF CONTENTS

	<u>Page</u>
A. A. Balandin	1
M. I. Barsukov	5
A. M. Dymov	8
G. S. Kostyuk	11
S. M. Leytes	14
V. V. Mikheyev	16
S. M. Milenkov	18
V. I. Molchanov	25
G. M. Panchenkov	28
B. V. Yerofeyev	31

## SOVIET SCIENTIFIC AND ENGINEERING PERSONNEL

### A. Aleksey Aleksandrovich Balandin on his 60th Birthday

(Following is a translation of an article by A. A. Tolstopyatova in Zhurnal Fizicheskoy Khimii (Journal of Physical Chemistry), Vol 33, No 2, 1959, pages 504-506).

The outstanding Soviet scientist, Academician Aleksey Aleksandrovich Balandin, celebrated his 60th birthday on 20 December 1958. His 35 years of productive scientific activity have enriched world science with fundamental studies in the field of heterogeneous catalysis.

A. A. Balandin is a pupil of N. D. Zelinskiy and belongs to his scientific school. He developed the multiplet theory of catalysis, which includes an extensive amount of experimental material. The theory developed by A. A. Balandin, based on the teaching concerning the structure of matter, established a definite relationship between the geometrical distribution of atomic groups, undergoing direct changes during catalysis in the course of a reaction, and the geometrical pattern of active centers or multiplets, and at the same time takes into account specific energy relations, which frequently makes it possible to predict in advance the properties of substances acting as catalysts of various reactions. Over a period of 30 years, this theory has been continuously developed and improved, and at present is a valuable tool available to researchers faced with the problem of selecting a suitable catalyst for a wide variety of chemical reactions. A classification of organic reactions, developed on the basis of the multiplet theory, makes it possible to find new catalytic reactions. On the basis of his theory and classification system, A. A. Balandin was able to study a number of previously unknown and little studied reactions, occurring during the dehydrogenation of paraffins, olefins and alkyl benzenes, the dehydrogenation products of which are important in the industrial synthesis of monomers and in the production of synthetic rubber and other high polymers. In addition, reactions involving the dehydrogenation of amines, the hydrogenation of organic peroxides, and other reactions, were first predicted and then investigated.

As a result of presently available information on the form and dimensions of molecules and on crystall lattices, it is possible to construct models of multiplet complexes. Thus, according to the theory, for the dehydrogenation of cyclohexane and its derivatives, it is possible to use as catalysts metals having a cubic and hexagonal crystalline structure, and in addition, the atomic radii of catalysts must lie within a definite range. As a result of this fact, it is possible to point out which metals may be used as catalysts in the above-mentioned reactions. It has been shown recently that cyclohexane can be dehydrogenated over a rhenium catalyst, as was predicted on the basis of the multiplet theory.

A. A. Balandin is one of the pioneers in the study of the kinetics of organic catalytic reactions. He worked out a general kinetic equation for monomolecular reactions in a flowing system. A. A. Balandin and his associates have conducted extensive research in the field of kinetics, which are mainly concerned with the dehydrogenation of hydrocarbons, dehydrogenation and dehydration of alcohols, and dehydrogenation of amines.

The contradictions present in kinetic equations derived from Langmuir's equation, regarding the homogeneity and inhomogeneity of the catalyst surface, are overcome by the theory of quasi-homogeneous surfaces, which was elaborated in great detail by A. A. Balandin.

Studies conducted by A. A. Balandin and his associates on the kinetics of heterogeneous catalytic reactions made it possible to obtain data on the properties of activated complexes and adsorption complexes preceding the former type of complex. The formation of these complexes represents the most important stage in the mechanism of heterogeneous catalysis. Thermodynamic properties (variation in the free energy, entropy and enthalpy) are very important properties of these complexes. A. A. Balandin and his associates studied the dehydrogenation kinetics of alcohols of various structure on metal and oxide catalysts. Specific surfaces, relative adsorption factors, true reaction velocity constants, activation energies, and the thermodynamic functions of the catalytically active surface were determined. The presence of a rule (law), showing a relationship between enthalpy and adsorption entropy, was established. A study of the dehydration kinetics of alcohols in an adsorption monolayer is in progress. The kinetics and the mechanism of the dehydration of ethyl alcohol on aluminum oxide, and the dehydrogenation kinetics of butane and butylene, were studied by the tagged atom method. A detailed study was conducted of the reaction involving the catalytic preparation of styrene and its homologs, which are very important products in the manufacture of synthetic rubber and plastics.

A. A. Balandin is the founder of the theory of hydrogenation of unsaturated compounds. This theory presents a number of new concepts on the mechanism of catalytic hydrogenation of unsaturated compounds, which are connected with the multiplet theory. A number of kinetic equations have been derived, which are applicable within a wide range of concentrations. This theory is of great practical importance in the industrial manufacture of high-octane aviation gasoline, in the hydrogenation of fats, etc. On hand of extensive experimental data involving the hydrogenation of over 100 furane compounds on nickel and the hydrogenation of organic peroxides on nickel, platinum and palladium, A. A. Balandin was able to check the sequence of hydrogenation reactions calculated with the aid of the multiplet theory. The experimental data obtained were in complete agreement with the calculations of the multiplet theory and with the theory of hydrogenation.

The multiplet theory proved to be useful in the work done by A. A. Balandin and his associates on the study of the hydrogenation of polysaccharides aimed at the production of long-chain alcohols. This study yielded results of great practical importance. Studies on the kinetics of hydrogenation of triptcene derivatives were of great importance for the development of the structural aspect of the multiplet theory. These molecules, having a complex form and incapable of being arranged in a plane surface, are hydrogenated over nickel already at  $45^{\circ}$  and 1 atm. The fact that these molecules are hydrogenated indicates that the active centers of the catalyst are located on projections (protuberances) of the catalytic surface.

The multiplet theory underwent considerable development during the establishment of laws governing the selection of catalysts. The theory shows that the maximum catalytic activity must occur when the adsorption is not too great, whereby an adsorption potential equal to half the sum of the energies of reacting and splitting bonds corresponds to the maximum catalytic activity. Conditions resulting in an increased activity in mixed catalysts were established. The degree of unsaturation of surface atoms is calculated according to the influence exerted by the number of neighbors of atoms in active centers, and is expressed by a fraction of the sublimation energy. The theory involves an examination of the effect exerted by the nature of the reacting substance in the catalyst on the reaction velocity. This series of studies conducted by A. A. Balandin represents a significant contribution to the theory of catalyst selection. At present, a large amount of experimental data has been obtained in connection with the determination of the binding energies between

the reacting atoms in the molecule and the catalyst atoms, performed by a kinetic method on oxide catalysts. The kinetics of many reactions were studied, and in particular, the kinetics of the dehydrogenation of cyclic hydrocarbons and of the parallel dehydrogenation and dehydration of alcohols on lower oxides of Be, Al, Ti, Zr, Th, Cr, Mo, J, Sm, La, Pr, He, etc. On metal catalysts (Ni, Fe, Pd, Pt), the binding energies of H, C and O were determined by applying the equations of the multiplet theory to the experimental activation energies of the most simple reactions, such as o- and n-hydrogen conversions, deuterium exchange, ethan hydrogenolysis, hydrogenation of olefins, etc., as well as by using the method of adsorption-chemical equilibria. A knowledge of binding energies is required for the theory of catalyst selection.

Recently, the multiplet theory has been used in fermentative and asymmetric catalysis.

The theoretical studies performed by A. A. Balandin, always linked together by a single idea, are being confirmed and strengthened by a large amount of experimental material. His studies represent an invaluable contribution to the science of catalysis and are of great industrial importance. A. A. Balandin and his associates have published over 500 scientific papers and have also been awarded 12 authors' certificates for various inventions.

The present brief survey has described only a portion of A. A. Balandin's work on catalysis and has not mentioned at all his studies in other branches of chemistry, such as adsorption, reactions conducted in the presence of an electric discharge, structural conducted in the presence of an electric discharge, structural algebra, etc.

A. A. Balandin heads a large staff of scientific workers. He is the director of a laboratory studying the kinetics of catalytic organic reactions and also director of the Laboratory Imnei N.D. Zelinskiy at the Institute of Organic Chemistry of the Academy of Sciences USSR.

A. A. Balandin combines his scientific work with an extensive pedagogical activity and the training of qualified personnel. He was the first one to organize a course, a special laboratory and a chair for organic catalysis at the Moscow State University, and is still serving as head of this chair at the present time. He has trained a large body of students, which include members of republican Academies of Sciences, professors and candidates of chemical sciences.

At present, the scientific school of A. A. Balandin

includes such people as Ye. A. Agronomov, O. K. Bogdanova, A. K. Bork, I. I. Brusov, V. E. Vasserberg, N. A. Vasyunina, P. G. Ivanov, G. V. Isagulyants, Ye. I. Klabunovskiy, S. L. Kiperman, A. I. Kukina, G. M. Marukyan, V. V. Patrikeyev, S. Ye. Rayk, A. P. Rudenko, T. A. Slovokhotova, N. P. Sokolova, A. A. Tolstopyatova, L. Kh. Freydlin, A. P. Shcheglova, etc.

A. A. Balandin is engaged in extensive scientific and organizational work, acting as chairman of the Council studying the problem "Scientific Fundamentals for the Selection of Catalysts", attached to the Division of Chemical Sciences of the Academy of Sciences USSR; this council is entrusted with the coordination of all studies dealing with catalysis in the USSR.

The outstanding scientific, pedagogical and scientific-organizational activity of A. A. Balandin has been highly appraised by the Party and the government. A. A. Balandin has been awarded the Order of Lenin, 2 Orders of the Red Banner of Labor and a number of medals; he has also been awarded the Stalin Prize. In addition, he has received the Mendeleev and Lebedev awards for research in the synthetic rubber field and other research work. At present, A. A. Balandin continues to work in the same productive and tireless manner on the development of studies in the field of catalytic theory and practice.

B. A Prominent Figure in the Soviet Public Health System  
(On the 70th Anniversary of M. I. Barsukov)

[Following is a translation of an article by Docent  
G. R. Kryuchok in Zdravookhraneniye Belorussii  
(Public Health of Belorussia), No. 2 1960, pages 71-72.]

On 24 January 1960, the Soviet public celebrated the 70th anniversary of one of the oldest members of the Bolshevik Party and of an outstanding builder of the Soviet public health system, the scientist Mikhail Ivanovich Barsukov.

After graduating from the medical faculty of Moscow University in 1914, M. I. Barsukov worked as a regimental doctor at the front during World War I. Here, he became associated with the Bolsheviks and engaged in propaganda among the soldiers, explaining the nature of the war and pointing out the culprits. During the February revolution of 1917, he joined the ranks of the Bolsheviks and proved himself as a consistent Leninist during the entire course of his career.

During the days of October 1917, M. I. Barsukov headed the medical-sanitary section of the Military Revolutionary



Committee in Petrograd. In the certificate issued to him on 26 October 1917, the following task was specified: "To carry out an immediate reorganization of sanitary facilities in the republic".

M. I. Barsukov played a prominent role in the creation and organization of a national military and medical service. On 4 December 1917, he was appointed chairman of the Board of the Main Military Sanitary Administration. At the same time, he participated in the organization of a Council of Medical Boards. During the Civil War years, he headed sanitary sections on the Eastern, Southern and South-Western fronts and sections subordinate to the Western Military District. He must be credited for participating in the organization of the Soviet Red Cross.

Since 1921, Mikhail Ivanovich has been serving in responsible posts of the Soviet public health system: in 1921-1922, he served as a member of the Central Committee of the Medical and Hospital Workers' Union (Medsantrud); in 1923-1924, he served as director of the Far Eastern section of the public health system; in 1924-1930, he served as Peoples' Commissar of Public Health of the Belorussian SSR from 1930 to 1939, he served as director of the public health sector of Gosplan SSSR; during World War II, he was director of frontline evacuation points on the Kalinin and the First Pre-Baltic fronts, and was one of the organizers of the Military Medical Museum under the Ministry of Defense USSR. Since 1945, he has been working at the Institute for the Organization of Public Health and Medical History Imeni N.A.Semashko.

While occupying the post of Peoples' Commissar of Public Health of the Belorussian SSR, M. I. Barsukov contributed a great deal to the administrative shaping of the republican public health system, and in the selection, assignment and increase of personnel.

In a number of his reports and published articles, M. I. Barsukov gave a general description of the experience gained in connection with the setting up of a public health system in the Belorussian SSR. The basic concepts of the organization of a public health system in the republic were formulated in his publications "The Public Health System in Belorussia in 1924-1925", "During the Course of Two Years (Organization of Public Health in the Belorussian SSR During 1925-1926)", "The Struggle for Quality in Setting Up a Health Protection System", "The Organization of a Health Protection System in Soviet Belorussia and the Problems Which Must Be Considered in Connection With the 5 Year Plan", and in many other articles.

M. I. Barsukov always attributed a great importance to the role played by the public in the development of public health. He used to say: "No matter how many good decrees on public health are issued if all these measures are not thoroughly grasped by workers and peasants, if they are not subjected to their criticism, none of our ideas and concepts will ever produce successful results."

The studies and practical activity of Mikhail Ivanovich were concerned with the development of problems dealing with the protection of mothers and children, providing service to workers and employees, the setting up of district-territorial and dispensary health services, and medical training. During his service in the People's Commissariat for Public Health of the Belorussian SSR, he directed the work of the Scientific Medical Council under the People's Commissariat, he was able to effect the organization of a number of scientific-research institutes, and he strived to achieve a regular holding of scientific medical conferences. In his capacity as head of the chair for social hygiene at the medical faculty of the Belorussian State University, he contributed to the development of this particular field.

One of the most important traits of M. I. Barsukov was his bold promotion and education of young personnel.

After World War II, he was mainly concerned with problems related to theoretical and historical aspects of the Soviet public health system. A highly qualified generalization of the experience gained in connection with the development of public health in the Soviet Union is given in his important monographic studies entitled "Problems Concerned With the Organization of Public Health on the Eve of the Great October Socialist Revolution" (1946), "The Great October Socialist Revolution and the Organization of the Soviet Public Health System" (1951), "Problems of Prophylaxis in the Works of Z. P. Solov'yev" (1955), "An Outline of the History of Public Health in the USSR" (1957). M. I. Barsukov is the author of over 100 scientific studies.

M. I. Barsukov is devoting a great deal of attention to the development of historical and medical research, and he is the chairman of the All-Union Scientific Historical-Medical Society.

Even on his 70th Birthday, Mikhail Ivanovich is a living example of active and creative work, and is engaged in a wide variety of activities. Medical circles consider Mikhail Ivanovich as an example of a person who is constantly and tirelessly serving the Communist Party and the Soviet people.

C. Aleksandr Maximovich Dymov (On his 60th Birthday)

Following is a translation of an unsigned article in Zhurnal Analiticheskoy Khimii (Journal of Analytical Chemistry), Vol 15, No 1, 1960, pages 125-126.

One of the trends of the scientific-technical activity of A. M. Dymov, particularly during its early period, was the development of methods for analyzing starting raw materials, slags and finished products of ferrous metallurgy, followed by a standardization of these methods; this line of work was undertaken as a result of the urgent need on the part of plant chemical laboratories for such analytical methods, in connection with the restoration and expansion of the Soviet metallurgical and machine building industries. This work, performed by a commission under the Council of Plant Laboratories, resulted in the publication of several handbooks (collected works) describing industrial (plant) analytical methods, such as "Chemical Analysis of Carbon and Alloyed Steels, Cast Irons and Ferroalloys" (1937), "Standard Methods for the Analysis of Cast Irons and Steels" (1940), "Standardized Methods for the Analysis of Cast Iron and Steel" (1944), whereby two of these works were edited jointly by Academician E. V. Britske and A. M. Dymov. The above-mentioned handbooks proved to be of considerable help to plant laboratories in connection with the development and improvement of chemical-analytical control methods used in the metallurgical and machine-building industries.

In recent years (1953-1958), working in the same direction, A. M. Dymov participated in a program aimed at setting up international standards covering methods for analyzing manganese ores. He directed the work of a Soviet delegation of analytical chemists at two international conferences devoted to an examination of these standards, held in 1954 and 1956.

In connection with his work on the standardization of analytical methods, in addition to his direct participation in their experimental development, A. M. Dymov also compiled "Tables of Permissible Divergences in the Results of a Determination" for corresponding elements, and published a number of articles concerned with the problems of the accuracy of chemical analytical methods, used for control purposes in the metallurgical industry, and with the creation of standards aimed at improving the quality (accuracy) of this control work. These articles are entitled "On the Accuracy of Plant Control Methods" (1937 and 1938), and "Standard Samples and Their Role in the Control of Industrial Production" (1952).

The constant association of A. M. Dymov with plant laboratories and his knowledge of their current requirements are reflected in his publication work. Thus, for example, his textbooks "Rapid and Umpire Plant Methods of Metallurgical Analysis" (1933) and "Technical Analysis of Ores and Metals" (published in 5 editions) are widely used in plant and scientific-research laboratories. The second textbook listed above, having a volume of over 50 quires, is still used as a reference laboratory handbook in plant and research laboratories, has been translated into Chinese and Rumanian, and was awarded the Stalin Prize.

A. M. Dymov devoted a great deal of attention to the development of rapid (express) analytical methods, which were and are still urgently needed as a result of the improvement (Intensification) of technical processes in metallurgy and in the machine building industry.

A number of such methods have been developed and published by A. M. Dymov, such as "Rapid Method for the Determination of Silica in Aluminates" (1930), "A Rapid Method for the Determination of Manganese in Bronzes" (1936), "A More Rapid Analysis of Ferrosilicon" (1937), and "A Rapid Semi-Micromethod for the Determination of Calcium Oxide in Slags" (1946).

A. M. Dymov was also interested in problems concerned with the organization of plant laboratories and in setting up a system of chemical control in the metallurgical industry. He served as a member of a technical commission handling the acceptance of chemical laboratories at the Magnitogorsk Metallurgical Combine, and entrusted with the checking of analytical methods used at the Combine, which was set up at the time the first blast furnace of the Combine was put into operation (1931-1932). He published a number of articles concerned with these problems, including such articles as "To the Giant of Socialist Industry, a Powerful Laboratory Base" (1932), "Laboratories in Industrial Enterprises" (published in Izvestiya, 1932), "The Role of a Central Plant Laboratory" (published in Tekhnika, 1932), as well as several articles describing foreign experience in the organization of plant laboratories and in the analytical methods used in these laboratories, such as the article "Organization of an Industrial Control System in German Plant Laboratories" (1933), etc.

At the First All-Union Conference on Analytical Chemistry, A. M. Dymov presented a paper, which was later published, entitled "The Status and Organization of Analytical Control Methods in the Ferrous Metallurgical Industry".

A. M. Dymov was also concerned with problems involving the training of highly-qualified analytical personnel, which received practically no attention at all in pre-revolutionary Russia. He has published a number of articles on this problem, such as "Concerning Analytical Personnel for Plant Laboratories" (1954), "On the Training of Personnel for Plant Laboratories" (1938), etc. A. M. Dymov took an active part in setting up courses aimed at training and improving the qualifications of analytical chemists.

The growth of our plant laboratories in the ferrous metallurgical and machine building industries, and the development of analytical control methods, are described in his articles "Plant Laboratories in Capitalist Russia and Under Soviet Rule" and "Progress of Analytical Chemistry in the USSR During the Past 40 Years".

In addition to the development of classical analytical methods, A. M. Dymov also worked on the development of physical-chemical methods used in scientific-research work and in the daily practice of plant laboratories. In collaboration with his associates, he developed and published a number of photocolorimetric methods for determining the presence of elements in ferrous alloys (such as nickel, cobalt, silicon, tungsten and lead), a polarographic method for the determination of iron, etc.

Recently, A. M. Dymov and his associates have been working on the development of methods for determining small amounts and microadmixtures of elements in technical and pure metals. Such methods include the determination of small amounts of magnesium in inoculated cast iron and in metallic nickel of high purity, the determination of arsenic and copper in metallic molybdenum, the determination of magnesium, tungsten and chlorine in titanium metal, and the determination of aluminum in carbon steels.

A number of studies concerned with the development of analytical methods involved the use of radio-active isotopes, for example the methods for the determination of phosphorus in ferroniobium and ferrotitanium.

It should be noted that the sequence in which A.M. Dymov developed methods for determining the components of ferrous and other types of alloys corresponded to the rate of growth of our Soviet metallurgy and machine building industry in regard to the manufacture of new grades of alloyed steel, ferroalloys and pure metals.

A. M. Dymov is the author of a number of textbooks,

Already in 1929, his handbook entitled "Guide for Laboratories Engaged in Technical Analysis" was published, and later was republished in 5 consecutive editions. A series of laboratory manuals describing semimicro methods of quantitative analysis was published in collaboration with staff personnel from the chair of analytic chemistry of the Moscow Steel Institute. In 1959, A. M. Dymov published a handbook on the analysis of metallurgical slags, and a handbook on the analysis of ferrous and manganese ores is being prepared for publication.

It is also necessary to point out the extensive work done by A. M. Dymov on the editing and abstracting of textbooks and journal publications in the field of analytic chemistry and technical analysis.

A. M. Dymov is a member of the editorial boards of the "Journal of Analytical Chemistry" and "Plant Laboratory" (Zavodskaya Laboratoriya).

The Commission on Analytical Chemistry and the editorial board of the "Journal of Analytical Chemistry" of the Academy of Sciences USSR extend their best wishes to Aleksandr Maksimovich for many years of productive scientific work and further successes in training the young generation for the benefit of our country.

D. On The 60th Anniversary Of G. S. Kostyuk

Following is a translation of an unsigned article in Voprosy Psikhologii (Problems of Psychology), No. 6, 1959, pages 180-181.

Professor Grigoriy Silovich Kostyuk, Corresponding Member of the Academy of Pedagogical Sciences RSFSR, celebrated his 60th birthday in December 1959.

G. S. Kostyuk is an outstanding representative of Soviet Ukrainian psychology, who in his works examined a number of new problems in the field of psychological science.

The son of a peasant, Grigoriy Silovich, during the course of his long life as a Soviet scientist, advanced from the status of a rural teacher to that of professor of psychology and director of a leading Ukrainian psychological establishment, namely the Scientific-Research Institute of Psychology of the Ukrainian SSR.

In his extensive scientific work, Prof. Kostyuk directed his attention first of all to problems concerned with

educational psychology, the assimilation of knowledge by pupils, methods of activating their cognitive activity during class periods, increasing their rate of progress, standardization of their work load and of their labor assignments, and with psychological foundations for an individual approach to students during the course of educational work with these students.

A number of studies performed by G. S. Kostyuk was devoted to problems concerning the psychology of understanding on the part of the students of the instruction material which they receive, and with the formation of concepts. In his experimental studies on the development of an understanding of numbers by children, a new interpretation is given to the problem of the sources of this understanding, on the role exerted by practical actions performed with objects upon the realization by children of quantitative relationships, on the course of transition from a perception of the totality of objects to the first understanding of their number. Under the direction of G. S. Kostyuk, experimental studies were conducted, which dealt with child understanding of pictures, artistic and scientific texts, behavior motifs of literary figures, and with the assimilation by students of mathematical, grammatical and other concepts.

A large cycle of studies performed by G. S. Kostyuk is devoted to problems concerned with the child personality formation, and to the interaction between heredity, environment, education and the development of the child. In these studies, fatalistic concepts of the psychic development of the personality are subject to criticism, and a serious attempt is made to describe this problem on the basis of a Marxist interpretation of the personality and of the conditions governing its development. In the articles published by G. S. Kostyuk during the past few years, as for example in the articles published in the journals "Problems of Psychology" and "Soviet Pedagogy", the complex nature of the interrelationship between instruction, education and development is clarified, and it is shown that, not only does development depend upon a child's education, but that education is based on achievements during its development; conditions are explained, under which education fulfills its leading role in the development of personality. These studies, which triggered an extensive discussion of the problem concerning the relation between child education and development, have been translated into Chinese, Rumanian, English and other languages.

A special place in the scientific activity of G. S. Kostyuk is occupied by studies on theoretical problems of psychological science, such as the unity and difference between physiological and psychological factors in the reflecting power of the brain, the psychological importance of I. P. Pavlov's

theory concerning the higher nervous activity, the specific nature of psychological rules (laws), etc.

G. S. Kostyuk made a valuable contribution to the development of the history of psychology. He has published a study on the importance of K. Marx's ideas in the development of scientific psychology, and also a study of the psychological inheritance left by such men as Lomonosov, Skovoroda, Radishchev, Herzen, Belinskiy, Sechenov, Ushinskiy, etc. The handbook "Outlines of the History of Russian Psychology During the 17th-18th Centuries" (1952), which was published under his editorship, was awarded the Prize Imeni K. D. Ushinskiy. In his works, G. S. Kostyuk also examined problems connected with the development of Soviet psychological science.

Great credit should be given to Prof. Kostyuk for publishing the first original textbook of psychology for higher schools in the Ukrainian language. This textbook, published in 2 editions (1939 and 1941), proved to be one of the best Soviet handbooks on psychology. In 1955, under the editorship of G. S. Kostyuk, a new psychology textbook for pedagogical institutes was published, which was also awarded the Prize Imeni K. D. Ushinskiy.

A number of articles published by G. S. Kostyuk are devoted to problems concerned with the status of scientific work in psychology in the RSFSR, methods for improving the quality of this work, and ways of improving the level of psychology instruction in higher schools.

G. S. Kostyuk has published over 140 articles.

G. S. Kostyuk is able to combine successfully his thorough research work with an extensive amount of scientific-pedagogical and public work. Under his leadership, a considerable number of psychologists have been trained, which are working in various cities of the Ukraine. For many years, he served as head of the psychology chair at the Kiev Pedagogical Institute, and at present continues to serve as professor of this chair. G. S. Kostyuk systematically gives lectures for teachers and wide circles of the public. As an outstanding scientific administrator, he was able to successfully organize and conduct a number of important scientific conferences.

G. S. Kostyuk took part in the XIV and XV International Psychological Congresses. At present, he is the vice-president of the Psychological Society under the Academy of Pedagogical Sciences RSFSR, chairman of the Ukrainian Section of this Society, and member of the editorial board of the journal "Problems of Psychology". He also serves as a member of the



Administration Presidium of the Society for the Dissemination of Political and Scientific Knowledge of the Ukrainian SSR, and as a deputy of the Kiev City Soviet of Workers' Deputies.

The editorial board of the journal "Problems of Psychology" extends its sincere congratulations to Grigoriy Silovich Kostyuk on his 60th birthday and wishes him further creative success for the benefit of our country.

E. Samuil Moiseyevich Leytes

[Following is a translation of an article published by the editorial board in Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (Pathological Physiology and Experimental Therapy), No 6, 1959, pages 86-87.]

In December 1959, Professor Samuil Moiseyevich Leytes, Doctor of Medical Sciences, celebrated his 60th birthday and his 37 years of scientific, pedagogical and public activity.

S. M. Leytes started his scientific career already as a 3d grade student at the Khar'kov Medical Institute, while working as a preparator in the chair of pathological physiology. After graduating from the institute in 1923, S. M. Leytes was retained as an assistant at the chair of pathophysiology. During this time, S. M. Leytes devoted his attention to problems concerned with the physiology and pathology of fat and lipid metabolism. In a number of studies, he was able to establish the mutual relationship between fat and lipid metabolism, and the role played by the liver, lungs and the reticuloendothelial system, and specifically by the spleen, in effecting this relationship. During these years, on the basis of a series of experiments, S. M. Leytes suggested the possible formation of cholesterol from fatty acids, which has been generally accepted at the present time as a result of the application of the isotope method.

In 1930, S. M. Leytes was appointed head of the pathophysiology chair at the Smolensk Medical Institute and given the title of professor by the State Scientific Council of the RSFSR. In Smolensk, S. M. Leytes and his associates performed a number of studies describing metabolic reactions to food ingredients and the effect exerted by these ingredients on the chemism of bile. These studies, published as a collection of articles under the title "Problems Concerning the Physiology and Pathophysiology of Nutrition", revealed for the first time the metabolic activity of vegetable oils having a high content of unsaturated fatty acids. At present, this problem has assumed a special interest in connection with the so-called

"antisclerotic effect" of such oils. In Smolensk, S. M. Leytes was elected member of the Oblast' Executive Committee (Oblispolkom).

In 1933, S. M. Leytes was appointed head of the pathophysiology chair at the Ukrainian (Khar'kov) Institute for Post-Graduate Medical Training, and at the same time was appointed director of the clinical and physiological laboratory and head of the pathological chemistry section at the Ukrainian Institute of Endocrinology. During this period (1933-1941), S. M. Leytes and his associates established autoregulation phenomena in fat-lipoid and nitrous metabolisms in the course of experimental pathology. These studies "Physiology and Pathophysiology of Fat Metabolism") were used as the material for a doctoral dissertation, which S. M. Leytes defended in 1936. At the same time, S. M. Leytes and his associates conducted a number of studies on the pathogenesis of cholelithiasis, on the role played by the lipocaine substance present in the pancreas in regulating the fat metabolism, and also on the homeostatic function of the lungs in fat metabolism and on the interrelation of the liver and the lungs in metabolism. Special attention was devoted to the pathophysiology of adiposis. This entire series of studies was presented in a collection of articles entitled "Regulation of the Fat-Carbohydrate Metabolism".

Since 1945, S. M. Leytes has been working in Moscow. He is the head of a clinical-physiological laboratory in a clinic for therapeutic nutrition, and at the same time serves as head (up to the present time) of the pathophysiology section at the All-Union Institute of Experimental Endocrinology; in 1953, he was appointed deputy scientific director of this institute. Important research work on the pathogenesis of alipotropic lipid infiltration of the liver and on the experimental therapy of liver adiposis with lipotropic food factors, conducted during this time by S. M. Leytes and his associates, contributed to an extensive application of these factors during the treatment of liver diseases and diabetes mellitus.

Valuable results were obtained by S. M. Leytes and his associates in connection with the pathochemical identification of alloxan diabetes. As a result of the study of the role played by the lipocaine substance (lipocaine) in the pathogenesis of diabetes, the following two pathogenetic forms of diabetes were identified and described from a pathophysiological standpoint: insular diabetes (insulin insufficiency), and total pancreatic diabetes (lipocaine and insulin insufficiency). S. M. Leytes, in collaboration with A. A. Molchanova, developed an original method for the preparation of lipocaine, which is presently manufactured on an industrial scale and is widely used in the treatment of diabetes and liver diseases.

A great contribution was made by S. M. Leytes to the theory of adiposis; this problem forms the subject of 2 monographs.

S. M. Leytes is the author of over 150 published works, including 5 monographs.

The studies conducted by Prof. S. M. Leytes are widely cited in Soviet and foreign textbooks and monographs. A great deal of work has been done by S. M. Leytes in connection with the training of scientific personnel. A total of 4 doctoral and 18 candidate dissertations have been published by personnel working in laboratories headed by S. M. Leytes. Three of his students have been awarded the title of professor.

S. M. Leytes is a member of the Administration Board of the All-Union and Moscow Societies of Pathophysiologists, a member of the Board of the Moscow Society of Endocrinologists, and a member of the editorial board of the journal "Problems of Endocrinology".

The activity displayed by S. M. Leytes is held in great esteem by the Soviet government, which has awarded him the Order of Lenin and several medals.

The editorial board of the journal "Pathological Physiology and Experimental Therapy" warmly greets Sannuil Moiseyevich on his 60th birthday and wishes him many more years of good health and further creative achievements.

F. Vadim Vladimirovich Mikheyev (On his 60th Birthday)

[Following is a translation of an unsigned article in Sovetskaya Meditsina (Soviet Medicine), No 12, 1959, pages 132-133.]

Vadim Vladimirovich Mikheyev is a representative of that generation of Soviet clinicians, whose world outlook, scientific ideas and practical activity were shaped and developed during the period of growth of Soviet medical science and of the progress of Soviet public health.

After graduating in 1924 from the medical faculty of the Moscow State University, V. V. Mikheyev specialized in neuropathology at clinics headed by such outstanding Soviet clinical neuropathologists as L. O. Karkshevich, I. Yu. Tarasevich and M. B. Krol'. V. V. Mikheyev received pathohistological training in his selected special field in the laboratory headed by B. N. Mogil'nitskiy.

In 1936, V. V. Mikheyev was invited to the chair for nervous diseases of the Arkhangel'sk Medical Institute, which he headed very successfully for a period of 10 years. For setting up a system of neurological aid in rear area evacuated hospitals of Arkhangel'sk Oblast' during the World War II years of 1941-1945, V. V. Mikheyev, while still continuing to be active in the chair for nervous diseases, received a number of government awards. During these years, V. V. Mikheyev was closely associated with urgent problems in the field of neurosurgery, a field in which the participation of a neuropathologist plays a great importance. Even at the present time, V. V. Mikheyev has not severed his contacts with neurosurgery and serves as a member of the board of the All-Union Society of Neurosurgeons. He is the author of a monograph entitled "Neuropathology of Malignant Neoplasms" (1946).

Since 1945 up to the present time, V. V. Mikheyev has been the head of the chair for nervous diseases and psychiatry at the Moscow Medical Stomatological Institute. In 1958, V. V. Mikheyev published an interesting monograph entitled "Stomatoneurology", which reflected his clinical and pedagogical experience with problems of this special field.

V. V. Mikheyev is a prominent specialist on diseases of the nervous system caused by rheumatic infection, and enjoys a well-deserved authority among his colleagues in this field for his knowledge of problems concerned with these diseases. V. V. Mikheyev generalized his long and extensive experience in the field of neurorheumatism in a highly appraised monograph entitled "Cerebral Rheumatism" (1949). The same clinical subject forms the subject of another monograph by V. V. Mikheyev entitled "Neurorheumatism", soon to be published.

In addition to the above studies, V. V. Mikheyev is the author of numerous works (over 100) concerned with various other clinical problems in the field of neuropathology and with the organization of neurological assistance.

V. V. Mikheyev is known as a talented pedagogue. His textbook on nervous diseases for secondary medical schools has already been published in 10 editions and has been translated into many foreign languages. In 1954, V. V. Mikheyev published a textbook on nervous diseases for students of medical institutes, which, in regard to the masterful exposition, originality and thorough presentation of complex problems dealing with clinical aspects of nervous diseases, has been acknowledged as one of the best textbooks in this field by both students and scientists.

The public activity displayed by V. V. Mikheyev includes the organization of a society of neuropathologists and psychiatrists in Arkhangel'sk, his active participation in work done by the All-Union Society of Neuropathologists and psychiatrists, where he serves as deputy chairman; in addition, V. V. Mikheyev is a member of the Committee for Combating Rheumatism under the Academy of Medical Sciences USSR.

The editorial board of the journal "Soviet Medicine" notes with great satisfaction the active and productive work done by V. V. Mikheyev as one of its members, who is not only interested in the work done by experienced specialists, but also in any medical article, which, although written by a man lacking experience in regard to literary presentation, contains original ideas and useful suggestions in the field of clinical practice.

We wish to point out the modesty, responsiveness and great feeling of comradeship displayed by V. V. Mikheyev, which, in addition to his great scientific knowledge and extensive clinical experience, are acknowledged by all people.

The editorial board of the journal "Soviet Medicine" extends its hearty wishes to Vadim Vladimirovich for continued good health and further achievements in the Soviet public health field.

G. Stancho Milenkovich Milenkov (On his 60th Birthday)

Following is a translation of an article by A. Yu. Bronovitsky, D. M. Golub and E. K. Mogilevchik in Arkhiv Anatomii, Gistologii i Embriologii (Archives of Anatomy, Histology and Embryology), Vol 37, No 12, Leningrad 1959, pages 119-121.

Professor Stancho Milenkovich Milenkov, an eminent Soviet histologist and Doctor of Medical Sciences, celebrated his 60th birthday and his 30 years of scientific, pedagogical and public activity on 20 February 1959.

In 1929, S. M. Milenkov graduated from the medical faculty of the Central Asian State University in Tashkent. Already as a 3d grade student, he started to work as a preparator at the chair of histology and embryology headed by Prof. Ye. M. Shlyakhtin.

In the person of Stancho Milenkovich Milenkov we see an erudite specialist in the field of histology, and particularly in the field of neuromorphology, as well as a tireless

worker in the scientific field, an experienced pedagog, a simple charming man endowed with high moral principles, and a patriotic citizen of our great country, deeply devoted to its high ideals.

Stancho Milenkovich enjoys the great respect of all persons with whom he happened to come into contact. As a man, he is easy to get along with, a good friend, and enjoys a well-deserved authority among the large staff of instructors and associates of the Minsk Medical Institute.

In nothing the scientific achievements of S. M. Milenkov, we would like to point out especially his research work on the morphology of receptors of internal organs and of the skin, which constitutes an important scientific contribution. As a result of his research, he has contributed a large volume of new information not only in the study of various neural apparatuses, but also in the study of skin pigmentation processes occurring during certain diseases.

While working as an assistant under the direction of Prof. A. I. Kartamyshev, a skin venereologist, S. M. Milenkov was able to successfully study the histopathology of the skin and the changes occurring in its neural devices during the course of certain diseases. The information obtained during this study was summarized in his doctoral dissertations, which he defended in 1937. He has published over 40 scientific studies, including one monograph.

In his scientific studies, Stancho Milenkovich does not remain confined within the narrow boundaries of his special field, but also makes use of pathological material, keeping in mind the instructions given by B. I. Lavrent'yev, in which the latter states that pathological data constitute one form of natural experiment. S. M. Milenkov always attempts to correlate morphological studies with physiological and clinical problems.

In Central Asia, together with associates of the chair for histology (which he headed) at the Tashkent Medical Institute, S. M. Milenkov took part in a combined work program (1948-1952), involving the study of an important local (native) pathological problem, namely toxic hepatitis accompanied by ascites (Heliotropic toxicosis). As a result of extensive research in this field, a thematic collection of scientific articles devoted to this problem was published in 1952, under the editorship of S. M. Milenkov. This collected work included experimental studies performed at the chair for histology and a summary article written by S. M. Milenkov, which described the pathogenesis of hepatic changes occurring during this disease.

A number of studies conducted by S. M. Milenkov are devoted to the investigation and description of the morphological substrate of compensatory reactions of the nervous system. S. M. Milenkov was the first man to attempt, in the field of neuromorphology, to work out a wide classification system including both constantly present, as well as temporary and appearing during the course of pathological processes, structural formations of compensatory reactions in the central and peripheral nervous systems. Even though there are a number of debatable points in this classification proposed by S. M. Milenkov and in his generalization, the fact that his generalizing article, entitled "On the Morphology of Compensatory Adaptation Reactions of the Nervous System", was published, and the over-all positive results of the scientific approval of his reports presented at the First Belorussian Conference of Anatomists, Histologists, Embryologists and Topographo-anatomists and at the VI All-Union Congress of Anatomists, Histologists and Embryologists, confirm the high scientific value of the wide generalizations made by S. M. Milenkov.

In his studies and generalizations, S. M. Milenkov always correlates morphological data with the functional performances of corresponding structures, and thereby successfully promotes the morphological-functional trend in Soviet morphology, the foundations of which were laid by the unforgettable Boris Innckent'yevich Lavrent'yev.

S. M. Milenkov is actively struggling to promote the development of advanced morphology based on the principles of I. P. Pavlov's physiological theory.

S. M. Milenkov was able to combine his productive scientific-research work with extensive pedagogical work, in which he started to be engaged as an assistant and docent in the chair of normal histology and embryology at the Tashkent Medical Institute (1929-1939). He continued to work in this field as head of the chair for histology and embryology at the Irkutsk Medical Institute (1940-1945), at the Tashkent Medical Institute (1945-1952), and since 1952, at the Minsk State Medical Institute.

Under the initiative and direct participation of Stancho Milenkovich, the collections available at museums containing histological preparations, instruction diagrams and charts, and medical equipment, have been considerably expanded in all chairs directed by him. A number of candidate dissertations have been performed and defended under the direction of S. M. Milenkov.

S. M. Milenkov is not only an efficient pedagog, but also an active public figure. While living in Central Asia, for a number of years (1948-1952), he served as director of the scientific student society at the Tashkent Medical Institute and simultaneously as a member of the bureau of the Scientific Medical Council in the Ministry of Public Health of the Uzbek SSSR. Prof. S. M. Milenkov was repeatedly elected member of the Party Bureau of the Medical Institute. For a number of years, he has actively participated in the work of the editorial board of the journal "Public Health of Belorussia", and is a member of the editorial board of this journal at the present time. At the VI All-Union Congress of Anatomists, Histologists and Embryologists, Stancho Milenkovich was elected member of the board of the All-Union Scientific Society of Anatomists, Histologists and Embryologists.

The productive and varied scientific, pedagogical, educational and public activity of Prof. S. M. Milenkov has been highly appraised by the Soviet government, which has awarded to him the Order of the Red Banner of Labor and a medal for "outstanding achievements during the Great Patriotic War of 1941-1945". A decree of the Presidium of the Supreme Soviet of the Belorussian SSR, awarding an honorable certificate to S. M. Milenkov, was published on 14 August 1959.

Prof. S. M. Milenkov celebrates his 60th birthday in the prime of his creative power and great energy.

The Presidium of the Scientific Council of the Ministry of Public Health of the Belorussian SSR, the Administrative Board of the Society of Anatomists, Histologist and Embryologists, and the editorial board of the journal "Public Health of Belorussia" extend their best wishes to Stancho Milenkovich Milenkov for further creative achievements in the development of Soviet medical science and in the training of young scientific cadres.

List of Scientific Works Published by Prof. S.M. Milenkov:

1. "K voprosu o gistopatologicheskikh izmeneniyakh kozhi pri pellagre" (Concerning the Problem of Histopathological Skin Changes During Pellagra), Monograph published by Gosizdat UzSSR (State Publishing House of the Uzbek SSR), 1935.
2. "Über die Reaktiven Eigenschaften der Haut bei Pellagra im Lichte der Histopathologischen Veränderungen", Arch. f. Dermatol. u. Syphilis, Bd. 173, No 5, 1936.



3. "Ein Fall von Verstopfung der Schweißdrüsen bei Pellagra", Virch. Arch. f. Pathol. Anatom. u. Physiol. u. f. Klin. Med., Bd. 297, No 2, 1936.

4. "Ein Fall von Pellagra mit Eigentümlicher Affektion an der Haut, der Zunge und den Augen", Dermatol. Wochenschr. Bd. 102, No 24, 1936.

5. "Changes in the Peripheral Nervous System During Pellagra" (Report No 1), Meditsinskiy Byulleten' Irkutskogo meditsinskogo instituta (Medical Bulletin of the Irkutsk Medical Institute), 1942.

6. In collaboration with Prof. I. I. Pototskiy: "Concerning the Problem of the Histopathology of Skin Lesions During Recklinghausen's Disease", Voprosy dermatologii i venerologii (Problems of Dermatology and Venereology), Khabarovsk, 1943.

7. Together with Prof. I. I. Pototskiy: "Histopathological Skin Changes During Alopecia Areata", Ibid., Khabarovsk, 1943.

8. "Dendritic (Langerhans) Cells During Pellagra and Their Probable Functional Importance", Ibid., Khabarovsk, 1943.

9. "Changes in the Peripheral Nervous System During Pellagra" (Report No 2), Ibid., Khabarovsk, 1943.

10. Together with Prof. V. G. Shipachev: "On the Pathology of Late Abscesses of the Brain During Gunshot Wounds (Concerning Secondary Changes Occurring in the Capsule of a Brain Abscess), Report No 1, Voprosy neyrokhirurgii (Problems of Neurosurgery), Irkutsk, 1943.

11. "Histomorphological Changes in the Liver During Experimental Toxic Hepatitis With Ascites", Arkhiv Patologii (Archives of Pathology), Vol X, No 1, 1948.

12. "Hyperpigmentation of the Skin During Pellagra (Its Histomorphological Foundations and Mechanism)", Byulleten' eksperimental'noy biologii i meditsiny AMN SSSR (Bulletin of Experimental Biology and Medicine of the Academy of Medical Sciences USSR), No 3, 1948.

13. "Clogging of Sweat Glands During Pellagra", Sbornik Tashkentskogo meditsinskogo instituta (Collected Works of the Tashkent Medical Institute), Tashkent, 1949.

14. "Secretory System During Pellagra", Ibid., No 2(10) 1949.

15. "Certain Peculiarities in the Structure of the Human Solar Ganglion Receptor and Its Interrelation With Blood Vessels", Doklady AN UzSSR (Reports of the Academy of Sciences of the Uzbek SSR), No 12, Tashkent, 1949.
16. Together with Dr. O. P. Shtamberg: "Histomorphological Indices of the Therapeutic Action of Hydroionization According Chernyavskiy's Method", Sbornik trudov Instituta fizioterapii i kurortologii imeni N. A. Semashko v Tashkent (Collected Works of the Institute for Physical Therapy and Health Resort Science Imeni N. A. Semashko in Tashkent), 1949.
17. "Receptors of the Human Esophagus", Doklady AN UzSSR (Reports of the Academy of Sciences of the Uzbek SSR), No 2, Tashkent, 1950.
18. "Morphological Changes of Interneuron Synapses in the Peripheral Sympathetic Nervous System During Pellagra", *Ibid.*, No 4, Tashkent, 1950.
19. "On Pathomorphological Changes of Certain Skin Receptors During Leprosy", *Ibid.*, No 8, Tashkent, 1950.
20. "New Data on the Detection of Neuroreceptive Devices in the Organism With the Aid of Morphological Studies. Contemporary Problems in the Field of General Pathology and Medicine", Collected Works Dedicated to the 60th Birthday of Academician A. D. Speranskiy, 1950.
21. "Histological Studies of Receptors of Internal Organs and of the Skin". Transaction of the 3d Uzbek Conference of Physiologists, Biochemists and Pharmacologists, Tashkent, 1951.
22. "On the Pathogenesis of Liver Changes During Heliotropic Toxicosis", Collected Works: "Toxic Hepatitis With Ascites (Heliotropic Toxicosis)", Tashkent, 1952.
23. "New Developments in the Technique of Histological Studies (Review)", Doklady AN UzSSR (Reports of the Academy of Sciences of the Uzbek SSR), Tashkent, 1952.
24. "Chair of Histology", Sbornik trudov Tashkentskogo meditsinskogo instituta (Collected Works of the Tashkent Medical Institute) Tashkent, 1952.
25. Under the editorship of S. M. Milenkov, a collection of scientific studies was published, entitled "Toxic Hepatitis With Ascites (Heliotropic Toxicosis)", Tashkent, 1952, published by the Central Asian State University.

26. "On the Problem of the Morphological Substrate of Compensatory Functions of the Nervous System", Abstracts (Theses) of Reports presented at the Republican Conference of Physiologists, Biochemists, Pharmacologists and Morphologists, Belorussian SSR, Minsk, 1955.

27. "On the Problem of the Morphological Substrate of Compensatory reactions of the Nervous System", Zdravookhraneniye Belorussii (Public Health of Belorussia), No 1, Minsk, 1956.

28. Review of a book by V. V. Portugalov: "Outline of the Histophysiology of Nerve Endings", Ibid., No 12, Minsk 1956.

29. "Scientific Work Performed at the Chair of Histology", Sbornik nauchnykh rabot Minskogo meditsinskogo instituta (Collection of Scientific Studies Conducted at the Minsk Medical Institute), Vol 17, Minsk, 1956.

30. "On the Morphology of Compensatory-Adaptation Reactions in the Nervous System", Abstracts of Reports Presented at the First Belorussian Conference of Anatomists, Histologists, Embryologists and Topographoanatomists, Minsk 1957.

31. "Report on the First Belorussian Conference of Anatomists, Histologists, Embryologists and Topographoanatomists", Zdravookhraneniye Belorussii (Public Health of Belorussia), No 8, Minsk, 1957.

32. "On the Morphology of Compensatory-Adaptation Reactions in the Nervous System of the Brain", Materials of a scientific session devoted to the 40th Anniversary of the Great October Socialist Revolution, Part 1, Minsk, 1957.

33. Under the editorship of the author, together with D. M. Golub and others, there was edited and published a collection of abstracts of papers presented at the First Belorussian Conference of Anatomists, Histologists, Embryologists and Topographoanatomists, Abstracts of Reports, Minsk, 1957.

34. "On the Morphology of Compensatory-Adaptation Reactions of the Nervous System", Collection of Scientific Works of the Minsk Medical Institute, dedicated to the 40th Anniversary of the Great October Socialist Revolution, No 20, Minsk, 1957.

35. "On the Morphology and Reactive Changes of the Neural Apparatuses in the Soft Meninx During the Occurrence of Natal Tumors in Newborn Babies", Abstracts of papers read at the First Belorussian Conference of Anatomists, Histologists, Embryologists and Topographoanatomists, Minsk, 1957.

36. "On the Morphology of Compensatory-Adaptation Reactions of the Nervous System", Abstracts of papers read at the VI All-Union Congress of Anatomists, Histologists and Embryologists, Kiev, 1958.

37. "On the Division and Growth of Neural Cells of the Soft Meninx During Natal Tumors", Zdravookhraneniye Belorussii (Public Health of Belorussia), No 8, Minsk, 1958.

38. "On the Receptors of Certain Vegetative Ganglions. Contemporary Problems of Nervism in Physiology and Pathology". Collected Works published by the Institute for Normal and Pathological Physiology of the Academy of Medical Sciences USSR, dedicated to the 70th anniversary of Academician A. D. Speranskiy, Moscow, 1958.

39. "Review of the Atlas Collection of Microphotographs on Normal Histology and Embryology Compiled by L. I. Falin", Zdravookhraneniye Belorussii (Public Health of Belorussia), No 1, Minsk, 1958.

40. Together with Prof. D. M. Golub: "Report on the VI All-Union Congress of Anatomists, Histologists and Embryologists", Ibid., No 2, Minsk, 1959.

H. Vasiliy Ivanovich Molchanov (On his 90th Birthday)

[ Following is a translation of an unsigned article in Problemy Endokrinologii i Gormonoterapii (Problems of Endocrinology and Hormone Therapy), Vol V, No 2, 1959, pages 121-122/

On 31 December 1958, Vasiliy Ivanovich Molchanov, the oldest pediatrician in our country, celebrated his 90th birthday.

Prof. V. I. Molchanov, an active member of the Academy of Medical Sciences USSR and a prominent scientist, is a venerable clinician and a pupil and follower of the Russian medical schools founded by G. A. Zakharyan, A. A. Ostroumov, I. M. Sechenov, I. M. Filatov, the brothers N. S. and S. S. Korsakov and others; as a pediatrician, he must be credited with the further development of the basic pediatric concepts held by his teacher, N. F. Filatov.

V. I. Molchanov was born in 1868, graduated from Moscow University in 1894, and since that time has been constantly associated with the life and work of the children's clinic at the Moscow University (known since 1930 as the First Medical

Institute), where he has been working continuously for the past 66 years, starting as an ordinator. In his activity, Vasilii Ivanovich never remained confined within the limits of the clinic, and his work, observations and research extended far beyond the boundaries of the above establishment.

The school founded by V. I. Molchanov is a continuation of N. F. Filatov's school, which includes a large number of prominent Russian pediatricians, and of which V. I. Molchanov and G. N. Speranskiy are at present eminent followers.

It is difficult to properly evaluate the importance of the work done by Vasilii Ivanovich from the standpoint of Soviet pediatrics; there is not a single field in pediatrics in which the influence of his own studies, as well as of the studies performed by his pupils, has not been felt: for example, acute children's infections, rheumatismus, diseases of the nervous system, endocrine disorders in children, diseases of respiratory organs, etc.

It is possible to point out studies, which were carried out for the first time in this particular field, which resulted in the conduct of similar studies or served as a basis for the establishment of a new form of pathogenesis or of a peculiar feature in the clinical course of the disease. Such studies include first of all his dissertation for the title of a doctor of medical sciences, entitled "Adrenal Glands and Their Changes During Diphtheria" (1909). For the first time, V. I. Molchanov established not only the genesis of Toxic diphtheria, but also a large number of complications resulting from this type of diphtheria, such as specifically early heart paralysis (cardioplegia), depending upon the extent of injury of the adrenal glands.

For many years, Vasilii Ivanovich worked together with a number of outstanding pathologists (A. B. Fokht, etc), confirming his clinical observations on hand of experiments, or vice-versa, searching in his observations for an explanation of a given clinical phenomenon. This is the reason why his monographon "Diphtheria" (1947) is a basic textbook used by both physicians and medical students. This textbook describes in a simple, clear and intelligible language the complex theory of the pathogenesis of this important child disease, and points out the pathogenetic basis for the treatment of this disease.

V. I. Molchanov has contributed a great deal to the study of a number of acute children's infectious diseases, such as scarlet fever, measles (its etiology and active immunization), dysentery, acute diarrheas, nutrition in breast-fed babies, pneumonia in early infancy.

A great amount of credit must be given to V. I. Molchanov for working on the problem of child rheumatism; in addition to serving as the first chairman of the Committee for Studying Child Rheumatism, he was the first to establish the clinical aspects of the infectious-allergic theory explaining the origin of rheumatism. He was the first man who established a pathogenetic association between scarlet fever and rheumatism, between scarlet fever and endocarditis. In combating rheumatism, Vasilii Ivanovich embarked upon a course of extensive public propaganda, by publishing handbooks on rheumatism for pedagogs and parents, lecturing on rheumatism, etc.

Without limiting himself to a study of general problems in the field of pediatrics, Vasilii Ivanovich organized on a large scale research work concerned with a branch of pediatrics which had not been investigated at all up to that time, namely child endocrinology. He is the author of classical studies dealing with disturbances in the growth and development of children. Together with V. D. Shervinskiy and A. A. Kisel, he was one of the founders of the All-Union Society of Endocrinologists, training pediatricians and endocrinologists, and describing his extensive experience in a monograph entitled "Disturbances in the Growth and Development of Children", and also in a number of articles on endocrinology published in various journals and in the Great Soviet Encyclopedia.

Certain forms of endocrinology in children have been described for the first time by V. I. Molchanov.

It is difficult to enumerate all the fields of clinical medicine, and specifically of pediatrics, in which Vasilii Ivanovich is interested and which have been described in his numerous studies.

Vasilii Ivanovich is striving to apply the results of his scientific research in everyday life, and mainly to make them available to wide circles of physicians.

He frequently participated in congresses and conferences, where he was asked to present the most important reports, and where he shared his extensive experience and great knowledge with other scientists. During his daily visits to clinics and discussions of patient's cases, he was always surrounded by a large number of physicians.

Vasilii Ivanovich enjoys the well-deserved love and respect of both pediatricians, working in all parts of the Soviet Union, and physicians specializing in all fields. Many scientific workers and professors were former pupils of Vasilii Ivanovich, and known him as an exceptionally sensitive and easily

accessible man, very strict with himself and soft in his relations with other people. These former pupils congratulate V. I. Molchanov on his 90th birthday and wish him the best of health and energy.

In 1935, V. I. Molchanov was awarded the title of "Honored Scientist", and in 1945 he was elected active member of the Academy of Medical Sciences USSR. At the All-Union Congress of Pediatricians in 1957, he was unanimously elected honor member of the All-Russian and All-Union Society of Pediatricians.

The Soviet government has rewarded him with the orders of Lenin and the Red Banner of Labor, and also with a number of medals.

I. Georgiy Mitrofanovich Panchenkov (On his 50th Birthday)

[Following is a translation of an article by Ya. I. Gerasimov, K. V. Topchieva and I. A. Semlokhin in Zhurnal Fizicheskoy Khimii (Journal of Physical Chemistry), Vol 33, No 7, 1959, pages 1674-1675.]

The prominent Soviet physical chemist, Georgiy Mitrofanovich Panchenkov, professor at the Moscow Institute of the Petrochemical and Gas Industry Imeni I. M. Gubkin and at the Moscow State University, celebrated his 50th birthday on 24 April 1959. During the past 28 years, he has been engaged in productive scientific-research work, which he is conducting in close association with problems of interest to the national economy and combining with an extensive pedagogical and scientific-administrative activity.

The main fields of scientific interest of G. M. Panchenkov include the kinetics of heterogenous catalytic processes, methods used in the separation and analysis of isotopes, and the theory of the liquid state.

G. M. Panchenkov has developed general methods for calculating the flow rates of chemical reactions, which make it possible to calculate the rate of any type of reaction, both under stationary and non-stationary conditions. This work is of great importance in many branches of industry, where flow processes are used. G. M. Panchenkov and his associates have used these methods in studying reactions involving the thermal and catalytic cracking of hydrocarbons and petroleum fractions. In addition, these methods were used in studying reactions of hydrogen disproportionation in hydrocarbons, isomerization, alkylation and polymerization reactions, coke formation on

catalysts, and coke firing during the regeneration of catalysts. The quantitative relations obtained in this manner made it possible to undertake the development of scientifically well founded kinetic methods and reaction units. These methods are used at the present time in checking the operation of industrial cracking and polymerization units, in order to establish the optimum operating conditions of these units.

G. M. Panchenkov's studies on catalytic cracking played an important role in the design of industrial cracking units. G. M. Panchenkov and his associates have investigated a large number of various catalysts and have found catalysts having an optimum composition, which at present have found an extensive field of application in industry.

Interesting and important work done by G. M. Panchenkov includes studies of the mechanism of conversion of hydrocarbons on aluminum silicate catalysts, in which deuterium is used as a tagged atom.

G. M. Panchenkov has developed a theory concerning the viscosity of liquids, which allowed to establish the relation between the viscosity of liquids and the temperature, pressure and composition, which is in good agreement with experimental results. The studies conducted by G. M. Panchenkov on the theory of liquid viscosity represent a great achievement of Soviet science in one of the difficult and poorly developed fields of the theory of the liquid state. In 1952, these studies were awarded a Stalin Prize in the scientific field.

The general methods developed by G. M. Panchenkov in describing the process of liquid flow were also found to be useful in describing other properties of liquids. By using these methods, G. M. Panchenkov has recently been able to work out a theory of diffusion in liquids, which agrees well with experimental results. He also proposed a micro-diffraction method for measuring the diffusion factors of liquids, with the aid of which it is possible to observe the course of diffusion without in any way disturbing the process.

A large series of studies performed by G. M. Panchenkov is devoted to the development of methods for the separation and analysis of isotopes. At present, certain original methods developed by him and his associates in this field are being adopted in the industrial production of isotopes. An interesting, and apparently one of the best available methods for the separation of boron isotopes is the method of chemical exchange, developed by G. M. Panchenkov and his associates, which is based on the isotope exchange of boron halides and their molecular compounds with various compounds,



such as anisol, chlorex, sulfuric acid, etc. This method was demonstrated at the All-Union Industrial Fair, where it was awarded a II-grade diploma. This method was also highly appraised at international exhibitions held in Geneva, Peiping, Leipzig and Warsaw.

Of great interest are the methods of isotope separation proposed by G. M. Panchenkov and his associates, which are based on the use of kinetic and adsorption isotopic effects (for example, the separation of oxygen isotopes during the electric synthesis of ozone from oxygen), and on the application of the difference in the size of isotopic molecules. During the separation of oxygen isotopes by these methods, relatively high factors of single isotope separation have been obtained.

G. M. Panchenkov and his associates have developed original methods for the mass-spectrometric analysis of isotopes, involving the use of synthetic ion emitters, which are being used in a large number of laboratories during the isotopic analysis of alkali and alkaline earth metals, rare earth elements, lead, and other compounds.

G. M. Panchenkov has also conducted a number of important studies in other branches of chemistry. These include research on the structure of molecules in solutions and in chemical reactions taking place in a non-electrode high-frequency discharge, and studies of the properties of rubber solutions and of the "photo aging" (light aging?) of rubber, which are listed in all handbooks on the chemistry of rubber.

A number of studies performed by G. M. Panchenkov are devoted to the investigation of the combustion of hydrocarbons in other substances, aimed at determining the relation between the rate and extent of combustion and the structure of molecules.

Prof. G. M. Panchenkov is able to combine his extensive scientific-research work with a large amount of pedagogical activity. He organized the chair of physical and colloidal chemistry at the Moscow Institute of Petrochemical and Gas Industry Imeni I. M. Gubkin, as well as a laboratory for studying the chemistry and the separation of isotopes at the Moscow State University; he is still the head of this chair and laboratory up to the present time. For many years, G. M. Panchenkov has been giving a course on various sections of physical and colloidal chemistry, and has been directing the work of graduate and post-graduate (aspirant) students. 2 doctoral and 15 candidate dissertations have been completed under his direction. G. M. Panchenkov has published 2 monographs and about 100 articles in scientific periodicals, and has been awarded 10 author's certificates for various inventions and discoveries.

G. M. Panchenkov is engaged in extensive scientific-administrative work, serving as active member and Soviet representative on the International Commission on Constants. The productive activity manifested by G. M. Panchenkov has been highly appraised by the Soviet government. He has been awarded the Red Star and the Honor Badge (Znak Pocheta) orders and a number of medals; he is also a Stalin Prize laureate.

J. Boris Vasil'yevich Yerofeyev (On his 50th Birthday)

[Following is a translation of an article by S. V. Markevich in Zhurnal Fizicheskoy Khimii (Journal of Physical Chemistry) Vol 33, No 5, 1959, pages 1155-1156.]

Prof. Boris Vasil'yevich Yerofeyev, Doctor of Chemical Sciences, celebrated his 50th birthday on 10 May 1959.

A graduate of Moscow University, Boris Vasil'yevich started his scientific career in 1930 in the laboratory of Prof. V. K. Semenchko, where he was working on the development of precision methods for measuring the electric conductivity of electrolyte solutions. At the same time, he was interested in other fields of physical chemistry. His attention was attracted by the peculiar phenomenon involving the periodic condensation of vapors and gases. In connection with this problem, he wrote a short article, published in 1931, in which he gave a new explanation of periodic condensation.

In the middle of 1931, Boris Vasil'yevich started to work in the newly organized Nitrogen Institute (presently known as the Institute of the Nitrogen Industry), where his interests were centered on problems of heterogenous catalysis. Starting from the concept of the formation of nitrides as intermediate compounds during ammonia synthesis on iron catalysts, Boris Vasil'yevich, in close collaboration with N. I. Kobozev, studied the kinetics of thermal dissociation reactions and of the hydrogenation of iron nitrides, obtained from activated and unactivated catalysts. The hydrogenation of iron nitrides was found to take place according to characteristic autocatalytic curves, although the usual equation of homogenous auto-catalysis could not be used to describe the course of this reaction. B. V. Yerofeyev worked out a system of kinetic equations, which described in a satisfactory manner the kinetics of auto-catalytic reactions taking place with the participation of solid compounds; this system was based on the concept of the appearance of initial reaction centers, from which the reaction front extends into the depth of the parent substance.

In this manner, kinetic two-term equations of the following type were obtained:

$$\alpha = \beta t^n - \gamma t^{n+1} \quad (1)$$

In 1936-1938, Boris Vasil'yevich worked in the organic catalysis laboratory headed by Academician A. A. Balandin (Institute of Organic Chemistry of the Academy of Sciences USSR). Here, he continued his research on the kinetics of reactions of solid compounds forming the subject of his doctoral dissertation, which was defended in 1939. At this time, under the influence of the ideas expounded by Academician N. D. Zelinskiy, Boris Vasil'yevich also studied the kinetics of the catalytic synthesis of hydrocarbons from carbon dioxide and hydrogen, as well as the reaction of hydrogen with nickel halides and organic magnesium compounds, which, according to Schlenck, results in the formation of nickel hydrides, but which was found to be complicated by a number of additional phenomena. In 1939, Boris Vasil'yevich moved to Minsk, where he was appointed director of the Chemical Institute of the Academy of Sciences of the Belorussian SSR; he served in this capacity until the reorganization of the Institute in 1959.

In Minsk, Boris Vasil'yevich continued to work on his previously initiated research of the kinetics of reactions in which solid substances take part.

During the war, Boris Vasil'yevich worked at first at the Kuybyshev Pedagogical Institute Imeni M. Gor'kiy, where he headed the chemistry chair, and later organized and directed (until 1950) a new laboratory at the All-Union Institute of Aviation Materials (VIAM). He worked at this institute until 1950; at the same time, starting in 1944, he participated in the restoration of the Chemical Institute in Minsk. In 1950, he moved again to Minsk, where, in addition to performing scientific work, he served as a member of the Presidium (1950-1952), and also as vice-president (1953-1956) of the Academy of Sciences of the Belorussian SSR. In Minsk, Boris Vasil'yevich was also engaged in pedagogical work, directing the chair for catalysis (organized by him) at the Belorussian State University Imeni V. I. Lenin.

The scientific studies performed by B. V. Yerofeyev and his associates in Minsk are concerned with the following two main trends: the kinetics of reactions in which solid substances take part, which represents a further extension of his earlier work, and the kinetics of reactions involving

the auto-oxidation of hydrocarbons and other organic compounds. Recently, studies are also in progress under his direction, which are concerned with polymerization kinetics. The principal result of his research on the kinetics of reactions of solid substances is the derivation of a topokinetic equation of the following type:

$$\alpha = 1 - e^{-kt^n} \quad (2)$$

in which  $n$  may vary from 1 to 5-6 and higher values, depending upon the form of initial reaction centers, and, what is particularly important, depending upon the number of successive stages in the process of formation of initial centers. Later, B. V. Yerofeyev arrived at a topokinetic equation of an even more general for:

$$\frac{1}{(1-\alpha)} = kt^n \quad (3)$$

Equations (2) and (3) were checked on a large number of experimentally studied reactions. Later, Boris Vasil'yevich clarified the accuracy of various equations of monokinetic reactions, as well as their mutual relationship and application range. The topokinetic equations and ideas proposed by B. V. Yerofeyev found a wide field of application in the studies performed by Soviet researchers. In addition to the studies conducted by Boris Vasil'yevich and his associates, several score of studies performed by other authors have been published in the Soviet scientific literature; these studies point out the great advantages resulting from the application of B. V. Yerofeyev's equations during research on reactions involving the participation of solid compounds.

The research work done by Boris Vasil'yevich on the kinetics of low-temperature auto-oxidation of hydrocarbons resulted in the discovery of a number of important factors in this field. Thus, he and his associates were able to show that cobalt and manganese salts of carbonic acids act as initiators during auto-oxidation, and not as catalysts, as was assumed by other researchers. Together with N. I. Mitskevich and T. I. Soroko, he discovered the phenomenon of decarboxylation, accompanied by auto-oxidation, and he explained the mechanism of this phenomenon. The method used for the derivation of topokinetic equations was also applied by Boris Vasil'yevich in the derivation of an equation expressing the kinetics of polymerization. This field also includes research (performed in collaboration with S. F. Naumova) on the chemism of the inhibiting effect exerted by hydroquinone, which provides a new

explanation for the ability displayed by small components of hydroquinone to prevent for a long time the polymerization of large amounts of monomer.

A total of over 110 scientific studies were published by B. V. Yerofeyev. He also devotes a great deal of time to the training of scientific personnel. Under his direction, 22 candidates of sciences and 1 doctor of sciences completed their dissertations.

The scientific achievements of Boris Vasil'yevich are highly appraised by the Soviet people. In 1940, he was elected a corresponding member, and in 1947, an active member of the Academy of Sciences of the Belorussian SSR. For his extensive scientific and scientific-technical activity, Boris Vasil'yevich received from the Soviet government two orders of the Red Banner of Labor, the order of the Red Star, the "Honor Badge" (Znak Pocheta) order, and several medals, as well as an Honor Certificate from the Supreme Soviet of the Belorussian SSR. The Belorussian people have expressed their great confidence in Boris Vasil'yevich, by electing him twice (in 1951 and 1955) as a deputy of the Supreme Soviet of the Belorussian SSR.

Boris Vasil'yevich is devoting a great amount of energy to public activities connected with his membership in the All-Union Chemical Society Imeni D. I. Mendeleev and in the "Znaniye" (Knowledge) Society.

On his 50th anniversary, the pupils and associates of Boris Vasil'yevich, who has reached the prime of his creative abilities, extend to him their best wishes for continued good health and further extensive research at the Institute for Physical-Organic Chemistry of the Academy of Sciences of the Belorussian SSR, which he has been directing since 1959, and at the chair for catalysis of the Belorussian State University Imeni V. I. Lenin.

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